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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,960	08/22/2003	Marc I. Zemel	A302	3008
46506	7590	01/25/2006	EXAMINER	
ANVIK CORPORATION 6 SKYLINE DRIVE HAWTHORNE, NY 10532-2165			KURTZ, BENJAMIN M	
			ART UNIT	PAPER NUMBER
			1723	
DATE MAILED: 01/25/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/646,960	Applicant(s) ZEMEL ET AL.	
	Examiner Benjamin Kurtz	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/12/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/22/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 4, 5, 6, 8, 9, 10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: (25) pg. 22, line 15, (21-29) pg. 25, line 9, (31) pg. 26, line 1.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: fig1: (10), fig. 3: (6) and (13) and (14) and (15), fig. 4: (15), fig. 15: (26), fig. 16: (26) and (27).
4. The drawings are objected to because fig. 3 and fig. 8 are not clear and do not show detail as to the content of the apparatus.
5. Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The abstract of the disclosure is objected to because it exceeds 150 words.

Correction is required. See MPEP § 608.01(b).

7. The disclosure is objected to because of the following informalities: On pg. 15 FUMP is referred to as (5) and the UV light source as (4), then on pg. 17 the FUMP is referred to as (4).

Appropriate correction is required.

Claim Objections

8. Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 12 cannot be dependent on itself. For examination purposes it is assumed that claim 12 depends from claim 9 where an emission material is first mentioned.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 12, 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. The term "just sufficient" in claim 12 is a relative term that renders the claim indefinite. The term "just sufficient" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in

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the art would not be reasonably apprised of the scope of the invention. It is assumed that any operable apparatus has sufficient pressure to prevent collapse. Therefore, an apparatus that can operate under any condition is deemed to meet the limitations of the claim.

11. Claim 16 cites the limitation "interior access means", it is assumed the applicant is invoking 35 U.S.C. 112, 6th paragraph. Claim 16 is rejected because the specification does not disclose an interior access means therefore it is impossible to identify any structural equivalent.

12. Claim 17 recites the limitation "said sealed flexible micro discharge array". There is insufficient antecedent basis for this limitation in the claim. For examination purposes it is assumed as "said sealed micro discharge array".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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13. Claims 1-3, 14, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ressler et al. Patent No. 5,626,768.

14. Regarding claims 1-3, Ressler (768) discloses a fluid treatment apparatus comprising: a fluid treatment chamber (32) having a fluid input/output line (42), that performs the identical function of moving fluid into/out of the treatment chamber (32) in substantially the same way with substantially the same results as the funnel disclosed herein, the fluid is fed to the treatment chamber (32) (col. 6, line 12, 2021). A sealed (enclosed by treatment chamber (32)) micro-discharge (relatively small means for emitting radiation) array (34) in the fluid treatment chamber (32) in effective radiation proximity to the fluid (fig. 4, col. 6, lines 20-24). A power supply (18) that is connectable to the discharge array (34) by wires (46) (fig. 1, 4, col. 6, lines 20-24) effective to cause emission of radiation to the fluid. The apparatus is optimized for disinfecting a fluid by reducing live micro-organisms (col. 1, lines 63-65). The discharge array emits ultra-violet light as the radiation for treatment (col. 2, lines 12-16).

15. Regarding claims 17 and 18, Ressler (768) discloses a separation assurance means (36) that performs the identical function of restricting the fluid flow to a channel adjacent to the array (34) in substantially the same way with substantially the same results as the spiral, chain or rod separators disclosed herein. The rod (36) threads a clamp (38) which clamps the array (34) against the base (40) thereby assuring the fluid flows through the central passage and then leaves by the outer passage, not bypassing the radiation treatment (col. 6, lines, 16-23).

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16. Regarding claim 14, Ressler (768) discloses a water purification apparatus (30) formed as a treatment chamber (32) with input (42) and output (44), a micro discharge array (34) positioned in the treatment chamber (32) that emits radiation when electrically activated, and being dimensioned so that radiation impinges on all the water in the chamber (32) (fig. 1, 3, col. 6, lines 12-24). With a power supply (18) that performs the identical function of providing electrical energy to the discharge array (34) in substantially the same way with substantially the same results as the electrical power means disclosed herein (fig. 1, 3, col. 4, lines 29-30).

17. Claims 1, 3, 14 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Cooper et al. Patent Pub. No. US2004/0144733.

18. Regarding claim 1, Cooper (733) discloses a fluid treatment apparatus comprising: a fluid treatment chamber (110) having a fluid inlet (130) which performs the identical function in substantially the same way with substantially the same results in that it introduces a fluid to the chamber (110) (fig. 1, pg. 3, paragraph [0057]), a sealed micro-discharge array (120) mounted in the treatment chamber (110) in radiation proximity to the fluid (fig. 1, 2, pg. 3, paragraph [0057] and [0058]), and a power source (180) connectable to the array effective to cause emission of radiation to the fluid (pg. 3, paragraph [0057]).

19. Regarding claim 3, Cooper (733) discloses the micro-discharge array provides ultraviolet light to radiate the fluid (pg. 4, paragraph [0060]).

20. Regarding claim 14, Cooper (733) discloses an apparatus for water purification formed as a water treatment chamber (110) with input (130) and output (140) with an

electrical power source (180), which performs the identical function in substantially the same way with substantially the same results in that it provides power in the form of electricity to the micro-discharge array (120) positioned in the chamber (110) to emit radiation when electrically activated. The treatment chamber (110) and the micro-discharge array being configured so that radiation impinges on all water in the treatment chamber (fig. 1, pg. 3, paragraph [0057])

21. Regarding claim 15, Cooper (733) discloses a cylinder with in-line input (contaminated), UV filter, treatment chamber cylinder and output (decontaminated) (fig. 25a-b, pg. 8 paragraph [0107]).

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ressler (768) in view of Eden et al. Patent No. 6,695,664.

24. Regarding claim 4, Ressler (768) discloses the invention of claim 1, but does not teach the array is flexible. Eden (664) teaches a micro-discharge device (100) that can be made into an array that is flexible (col. 3, lines 22-27). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the array

taught by Eden because an array can be flexible and light enhancing portability and utility (col. 5, lines 39-43) for instance when replacing an array in the apparatus.

25. Regarding claim 5, Ressler (768) discloses an array comprising an enclosing treatment chamber (32) but does not teach a plastic film with an array of via-hole sites. Eden (664) discloses a micro-discharge array and a plastic film (col. 7, lines 11-17), an array of via-hole sites (102) with electrical connections at each via-hole site (102) that provide power to juxtaposed cathode (106) and anode (104) conductors (fig. 6A, 6B, col. 10, lines 48-65, col. 9, lines 14-21), and sealed in a radiation-producing atmosphere (col. 7, lines 11-17). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus with the teachings of Eden (664). A plastic film reduces the outgassing of the array and extends its lifetime (col. 10, lines 27-34). The via-hole sites allow light to escape (col. 5, lines 19-21). The electrical connections to each via-hole site overcome the problem of ohmic losses over a large array (col. 9, lines 1-21). When the voltage difference between the cathode (106) and the anode (104) create an electric field large enough to electrically break down the gas (radiation-producing atmosphere) light is produced (col. 5, lines 16-20).

26. Regarding claim 6, Ressler (768) further discloses the array is configured within the treatment chamber (32) for effective radiation exposure of the fluid and for effective fluid flow (col. 2, lines 11-16).

27. Regarding claim 8, Ressler (768) further discloses a separate embodiment with an array configured as parallel plates (fig. 3, col. 2, lines 61-64). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use

the parallel plates because it creates a long flow path within a reasonable apparatus size and permits the liquid to be exposed to radiation on the top and bottom of each flow path (col. 3, lines 8-13).

28. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ressler (768) in view of Eden (664) as applied to claims 5 and 6 above, and further in view of Betterly Patent Pub. No. 2005/0000913.

29. Regarding claim 7, Ressler (768) in view of Eden (664) teaches the micro discharge array in the apparatus but does not teach the array configured as a spiral. Betterly (913) teaches a radiation source array (200) may be any number of shapes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the array as a spiral in view of the teachings of Betterly (913). Any shape is suitable so long as adequate radiation energy is transmitted to the fluid in the fluid passageway (pg. 2, paragraph [0027]).

30. Regarding claim 9, determination of "product by process" claims is based upon product alone, In re Thorpe, 227 USDQ 964 (1985). Eden (768) discloses the micro discharge device (100) was evacuated and then backfilled with a desired gas (fig. 1, col. 7, line 64 – col. 8 line 1).

31. Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ressler (768) in view of Eden (664) in view of Betterly (913) as applied to claims 7 and 9 above, and further in view of Benoit et al. Patent Pub. No. 2004/0238344.

32. Regarding claim 10, Ressler (768) v. Eden (664) v. Betterly (913) teach the apparatus with a selected emission material but do not teach that material is XeI.

Benoit (344) teaches a discharge array filled with the Xel complex (pg. 2, Table 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Xel as the emission material. It is advantageous to have a material that emits in the UV region for decomposing organic compounds entrained in a fluid (pg.1, paragraph [0013], [0022]).

33. Regarding claim 13, Ressler (768) v. Eden (664) v. Betterly (913) teach the apparatus with a selected emission material but do not teach that it emits in the range of 250-260 nm Hg. Benoit (344) teaches the emission material emits in the range of 250-260 nm Hg (pg. 2, paragraph [0023], Table 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a material that emits in said range. The preferable range of emission is between about 200 and 360 nm for the purposes of air purification (pg. 1, paragraph [0016], pg. 2, paragraph [0023]).

34. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ressler (768) in view of Eden (664) in view of Betterly (913) as applied to claims 7 and 9 above, and further in view of Geusic et al. Patent No. 6,579,803. Ressler (768) v. Eden (664) v. Betterly (913) teach the apparatus with a selected emission material but do not teach the material is primarily a noble gas of high purity at a pressure range of 1-2 atmospheres. Geusic (803) teaches a micro discharge device (502) filled with a filler gas that can be Xenon, Neon, or Argon, at a pressure up to 1000 Torr (1.3 atm) (fig. 5A, col 4, lines 48-53). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a noble gas at 1-2 atmospheres. These gasses

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emit light in the wavelength below 468 nm and the pressure depends on the diameter of the hollow cathode (col. 4, lines 48-53). The apparatus operates under the conditions given by the reference, therefore because the apparatus did not collapse the pressure of the emission gas must be sufficient to have prevented any collapse.

35. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ressler (768) in view of Eden (664) as applied to claim 14 above, and further in view of Lew et al. Patent No. 4,694,179. Ressler (768) v. Eden (664) teaches a water purification apparatus formed as a cylinder (32) but does not teach an in-line input, filter, treatment chamber, and output. Lew (179) teaches a cylindrical water purification apparatus (1) with in-line input (14), filter (4), treatment chamber (11), and output (13) (fig. 1, col. 2, lines 17-25, 44-49). It would have been obvious to one having ordinary skill in the art to modify the apparatus with the teachings of Lew (179). The light source keeps the filter from clogging and the filter enhances the germicidal action of the light source (col. 3, lines 21-27).

36. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ressler (768) in view of Eden (664) as applied to claim 14 above, and further in view of Reber et al. Patent No. 6,042,720 and Wekell Patent No. 4,816,149. Ressler (768) v. Eden (664) disclose a water purification device with an interior access means, or entry port (42) but do not disclose an indicating cap, a filter, or collapsible outer walls. The applicant discloses the prior art containing a collapsible water carrier in the specification (pg. 17, lines 5-7). Reber (720) teaches a water purification device having an indicator cap (120) (fig. 8, col. 6, lines 23-36). Wekell (149) teaches a water filtration system with a

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filter (26) and collapsible out walls (fig. 1, col. 1, lines 57-61, col. 3, lines 4-6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus with the teachings of Reber (72) and Wekell (149). The indicator cap of Reber (720) displays either an amount of time remaining in a disinfect cycle or a measure of quality of the fluid (col. 6, lines 32-36). The filter of Wekell (149) filters out particles from the fluid (col. 4, lines 31-40) and the collapsible walls allow the container to be folded to occupy less volume (col. 5, lines 14-20).

Conclusion

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Kurtz whose telephone number is 571-272-8211. The examiner can normally be reached on Monday through Friday 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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